BOOK REVIEWS Richard Hudson. 2007. Language networks: The new Word Grammar. Oxford: Oxford University Press. Pp xii + 275. ISBN 9780199267309.

Richard Hudson 2007 *Language Networks: the New Word Grammar*. Oxford: Oxford University Press. Pp xii + 275. ISBN-13: 978-0-19-926730-9

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In this book, Richard Hudson presents the first monograph length account of Word Grammar (WG) since his (1990) *English Word Grammar*. There is a preface of six pages, followed by a book of five chapters. The Introduction lays out the broad lineaments of the theory, introducing the reader to the idea that language is a conceptual network; to inheritance in its various guises; to spreading activation; and to a notion of how the theory might be evaluated. Apart from Chapter 4, the subsequent chapters are organised in terms of the different levels of grammar: Chapter 2 discusses morphology; Chapter 3, syntax; Chapter 4 is a specialist case study of gerunds, which draws on Chapters 1, 2 and 3; and Chapter 5 examines semantics, with the last three sub-sections making up an envoi exploring Hudson's ideas about the relationship between semantics and sociolinguistics.

Word Grammar is closely identified with Hudson. While it is undeniable that he has produced most of the published work in the theory, it is worth noting that there have been at least 10 PhD theses exploiting or developing the theory (including my own), in areas such as the relationship between syntax and processing; lexical semantics; the architecture of the grammar, focused on the morphology-syntax interface; code-switching; and dependency parsing. There have also been a number of papers and edited collections, perhaps best represented by Sugayama and Hudson (2006). Hudson has also collaborated with other scholars—see, for example, Creider and Hudson (1999). This research community context is important: the most interesting fact about *Language Networks* is how much is new. Yes, the theory is "the same" as the theory reported in Hudson's (1984) *Word Grammar*. But it is also substantially developed, and significantly changed, often in response to the challenges presented by other work in the theory. The core ideas which have been consistently part of WG are well represented in this book. Hudson assumes that the "grammar" is a declarative database of propositional knowledge about language, and WG is a strictly lexicalist theory. WG claims that language is a network; that it is part of a larger conceptual network, and therefore is simply an instantiation of general cognition; that all kinds of information, including sociolinguistic information, are relevant to our understanding of how language works; that human cognition is organised in terms of default inheritance; and that at the syntactic level, the unit of organisation is the dependency. Apart from dependency, which is discussed mostly in Chapter 3 "Syntax", these ideas are neatly laid out in Chapter 1 "Introduction". A new area of research for Hudson, which is also introduced in this chapter is spreading activation, which affords WG a theory of how the network is activated within human cognition.

Chapter 2, "Morphology" is a synthesis of new ideas, parts of which Hudson has presented elsewhere, and elaborated with collaborators. The theory of morphology is similar to Network Morphology (Baerman, Brown and Corbett 2005), which is unsurprising as one of the early developers of Network Morphology (Norman Fraser) wrote his PhD dissertation under Hudson's supervision. In Hudson's earlier book-length work, there have been gestures in the direction of a theory of morphology without there being any fleshed out analyses. This chapter begins with a discussion of agent nouns, like farmer, through which Hudson spells out the main contents of his theory. WG morphology is an autonomous level. Word structure facts are not to be analysed within some other level of grammar, such as syntax or phonology—instead, it is

understood that words themselves have principles of organisation. Hudson distinguishes word forms from lexemes and from phonological structures.

Hudson also maintains a strict distinction between derivational and inflectional morphology. This follows from the default inheritance logic of the theory—one of the aspects of the book that I find most impressive is the rigorous application of this logic to all areas under analysis. However, he shows that this distinction applies at the level of words, rather than the level of forms, so his theory is similar to Blevins' (2001) Word and Paradigm model.

After introducing the model in the discussion of farmer, Hudson discusses a range of other data, for example the Slovene paradigms for *brat* 'brother', and *človek* 'person'; compounding (matchbox); German past participles; semitic interdigitation, where for example the Arabic for 'book' "whose base is {kita:b}, is realized as {kutub}" (p.98); "fused words" such as French du (= "*de le", p.100); and clitics.

Chapter 3 "Syntax" is the longest chapter in the book. This reflects Hudson's long standing engagement with syntax and in many ways it is quite right that syntax should be at the core of the theory. Although *Language Networks* is a theory of language *tout court*, ideas which are presented in the chapter on syntax are exploited elsewhere. The chapter begins with a defence of dependency structure as an alternative to phrase structure. Hudson has written on this topic elsewhere, but it is useful for him to present a summary of the dependency position, and relevant not only to WG but also to other dependency theories. The chapter includes sections on word order, selection and constructions, agreement and features, dependency types, mixed categories, and unrealized words. There is a rigorous application of the cognitive approach to language in this chapter as in the others. For example, Hudson writes (p. 153) "syntax is basically a rather messy collection of inductive generalizations on which we impose some order by generalization, rather than a small set of very simple, very abstract, and very elegantly interacting patterns on which the imperfections of language have imposed some mess".

The challenge is to meet the degree of analytical sophistication you can find in other theories while maintaining the cognitive position. In WG, this is permitted by the very fine grain of analysis that dependencies allow, and the relative abstraction of dependencies interacting with the concrete properties of individual words. However, although in Hudson (1990) it seemed possible to have a grammar which did not exploit empty categories, it has become clear in the last 17 years that there do need to be unrealized words at least. The WG of *Language Networks* therefore includes unrealized words in its theoretical machinery.

This chapter is focused on presenting the WG machinery rather than developing new analyses of old phenomena, or extending the analytical range of the theory into new data sets. I think that the decision to present the material on syntax in this way is appropriate, given that in the bibliography Hudson itemises a number of papers which show how WG tackles control, mismatch, NP structure, and left periphery phenomena, as well as the analysis of gerunds which makes up the next chapter.

Chapter 4, as I have just said, is about gerunds. Hudson is strongly influenced by Malouf's (2000) account of mixed categories which exploits multiple default inheritance in order to account for the strange distributional and complementation properties of gerunds. Hudson's account, which was previously published as Hudson (2003), draws on the developments in the theory which are described in the previous four chapters. Gerunds have always been a challenge for linguistic theories. If we say, for example, *killing foxes with hounds should be legal*, we can see that the classification and analysis of *killing* is not straightforward. On the one hand, it is the subject of *should*—so it is a noun. On the other hand, it takes a direct object, *foxes*—so it must be

a verb. How can we accommodate these facts?

Hudson's analysis is to say that the gerund, *killing*, inherits by multiple default inheritance, from two supercategories: Noun and (non-finite) Verb. From the category Noun it inherits its distribution. Because the category Noun does not include complementation information (if a noun has a complement, this is lexically specific information), no complementation facts follow from this classification. From Verb, *killing* inherits its complementation—it does not inherit its distribution, because the category Verb (or non-finite Verb) does not have a distribution. Finite verbs have a distribution, and particular instances of non-finite verbs (such as *–ing* participles) do too, but the category non-finite Verb does not have a distribution associated with it. This simple observation, and the simple facts about multiple default inheritance which apply make for a powerful analysis that is rigorous and entirely consistent with the rest of the theory as it is developed elsewhere in this book.

Chapter 5 is the last chapter in *Language Networks*. Hudson's account of semantics is tied to a model of social meaning which is, in turn, located in a theory of signals and symbols. The theory of semantics is grounded in lexical semantics—which is appropriate enough for a theory called Word Grammar—but Hudson also develops an account of reference, definiteness, negation and tense which makes the WG theory a serious challenger to formal theories of semantics.

So what is new about the theory reported in this book? A lot. First, multiple default inheritance is new: in Hudson (1990), only non-branching inheritance is described and used. The 1990 theory might have permitted multiple inheritance, but there is no description of it in the earlier book. Second, default inheritance itself has been rethought in response to the problem of non-monotonicity it brings about. Third, there is a new theory of set structure, which makes quantification in WG more rigorous, and more rigorously located in the network architecture than hitherto. Fourth, the cognitive basis of the theory has a serious psychological underpinning from the account of spreading activation: the Network Postulate (p.1) is now grounded in a theory of psychology. The whole of the theory of morphology is new. The theory of word order is new. The relationship to Construction Grammar has been radically rethought. The theory of gerunds involves a wholesale rejection of the account offered in 1990. And finally, locating linguistic meaning in social meaning, which is the objective of the last three parts of Chapter 5 is also new (although prefigured, to some extent, in Hudson's Sociolinguistics textbook).

Let us look a little more closely at the analysis of gerunds, which is a useful way of seeing how things have changed in WG. In Hudson (1990: 316-26), when Hudson did not exploit the possibilities of multiple inheritance, gerunds were analysed as cliticization structures. Let us take my *killing foxes* example above. The *-ing* part was identified as a Noun which took the verb, *kill*, as a predependent. Because the *-ing* part is a Noun, nominal distribution follows. The complementation of the gerund follows from the presence of *kill* which brings its normal valency requirements with it. Hudson (1990: 319) analyses the verbal part of a gerund as a non-finite verb, which is an analysis that persists in the mixed categories, multiple inheritance story of *Language Networks*, as does the treatment of *-ing* as a special kind of Noun which does not inherit from the other types of Noun, such as Common Noun, Proper Noun, or Pronoun (p. 197).

Is the new analysis better than the previous one? Hudson, following Malouf (p. 190) clearly thinks so: the clitic analysis I have just described is a variant of what is known as a "two-node" analysis. It is claimed that the disadvantage of the two-node account is that it requires extra machinery. The main problem for the clitic analysis within WG is that it causes tangling of the dependencies: if *-ing* is the head, and *kill* supplies the requirement for there to be a direct

object, then the dependency from *kill* to *foxes* crosses the dependency from the finite verb to *-ing*. On the other hand, clitics generally mess up word order facts, so this is no more of a problem here than it is for clitics across the board.

The new analysis means that there is only one word, and so only one node. This easily solves the dependency tangling issue and it follows straightforwardly from the multiple inheritance strategy. It does, however, result in a grammar that has mixed categories. Is that a problem? I do not think so: there are other places in grammar where it might help to have a mixed category analysis, such as Chinese co-verbs, and a mixed category analysis straightforwardly permits the modelling of categorial change under grammaticalization. But Aarts (2008) does see problems with such an account, and devotes most of its attention to criticizing Hudson's analysis. I think Hudson is on the right tracks, but perhaps there is still room for further debate about categorization.

But I do not see that the relative smoothness of the analysis is the main motivation for the new analysis. The old analysis worked, and in the new book Hudson has not specifically argued against it. Indeed, he has kept aspects of the old analysis: in the new analysis the gerund is classified as a special kind of noun, just as it was in the old one, and the verb is classified as a non-finite verb, exactly as before. The new analysis is interesting because we see a theoretical agenda being carried out, and analyses taken to their obvious conclusions. Gerunds are a kind of mismatch phenomenon. If you think that (some) mismatch phenomena can be analysed using multiple inheritance, and if multiple inheritance is a central part of your theory, then it makes sense to roll the analysis out and bring gerunds under its purview. That is, the new analysis of gerunds is part of an agenda to make the theory more cohesive. This is positive: WG is much more clearly grounded in inheritance than the 1990 theory was, because the analyses depend more obviously on the logic of inheritance.

I have to confess to being impressed by this book, which was published some 18 months after Hudson retired, after 40 years on the staff at UCL. The creative effort, and ongoing engagement with the theory, willingness to reject old ideas and try out new ones, and serious commitment to trying to implement good new ideas, including those from elsewhere in linguistic theory is, I think, highly impressive. I can think of several books by established scholars which do not reveal anything like the same willingness to abandon cherished positions and beliefs, and to try out new ideas. I am also impressed because the ideas which ground this book, such as multiple default inheritance, are so rigorously applied throughout its course.

On the whole, the book is well made and nicely presented. There are several diagrams, which are neat and very readable. The Introduction makes a good job of introducing the diagramming conventions. WG diagrams are the geometric equivalent of HPSG's (algebraic) Attribute Value Matrices, and I think they are easier to read. The book is clearly written in accessible prose and the arguments move forwards in a straightforward stepwise manner. There is a useful index and a very full bibliography. There is an awful typo on the first page, where *to* has been printed as *tzero* and there are some errors in the bibliography. For example, Rosta (2006) has been listed twice, in a 2005 variant, which does not exist, but which is given accurate page numbers, and as Rosta (2006) which does exist, but which has not been given page numbers. But these are small gripes. On the whole the publisher should be commended for a very good job. And one thing I am very grateful for indeed is that the (very few) footnotes occur on the page where they belong. More publishers should adopt this excellent practice.

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